

**Claims**

1. A nasal dispensing nozzle for use with a fluid medicament discharge pump device having a discharge outlet for discharge of pumped fluid medicament, the  
5 nasal dispensing nozzle comprising

a body defining a fluid flow channel;

an inlet port defining an inlet to said channel, said inlet port shaped for receipt of said  
10 discharge outlet to enable delivery of said pumped fluid medicament to the channel;  
and

an outlet port defining an outlet from said channel, said outlet port shaped for  
insertion into the nasal cavity of a user to enable delivery of the pumped fluid  
15 medicament thereto,

wherein a screw thread path is provided to the channel between the inlet and said  
outlet to impart angular momentum to the pumped fluid medicament.

20 2. A nasal dispensing nozzle according to claim 1, wherein the body further  
defines a hollow chamber locating between the screw thread path and the outlet  
port.

3. A nasal dispensing nozzle according to either of claims 1 or 2, wherein the  
25 screw thread path defines at least three complete screw turns.

4. A nasal dispensing nozzle according to any of claims 1 to 3, wherein the  
screw thread path extends in symmetric fashion about a screw thread axis.

30 5. A nasal dispensing nozzle according to claim 4, wherein the screw thread axis  
corresponds to the pumping axis of the fluid medicament discharge pump device.

6. A nasal dispensing nozzle according to either of claims 4 or 5, wherein the fluid flow channel is symmetric about the screw thread axis.

7. A nasal dispensing nozzle according to any of claims 4 to 6, wherein the body  
5 of the nozzle is symmetric about the screw thread axis.

8. A nasal dispensing nozzle according to any of claims 1 to 7, wherein the screw thread path comprises plural screw threaded pathways.

10 9. A nasal dispensing nozzle according to claim 8, wherein each screw threaded pathway is arranged about a common screw thread axis.

10. A nasal dispensing nozzle according to either of claims 8 or 9, wherein the screw thread path comprises from two to eight screw threaded pathways.

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11. A nasal dispensing nozzle according to any of claims 1 to 10, wherein the screw thread path is defined as an enclosed volume by the body of the nozzle and one or more inserts provided thereto.

20 12. A nasal dispensing nozzle according to claim 11, wherein the body defines a generally cylindrical channel having smooth walls and the body snugly receives a cylindrical insert having a screw thread surface.

13. A nasal dispensing nozzle according to claim 11, wherein the body defines a  
25 generally cylindrical channel and has a screw thread surface defined therein and the body snugly receives a cylindrical insert having smooth walls.

14. A nasal dispensing nozzle according to claim 11, wherein the body defines a generally cylindrical channel and has a screw thread surface defined therein and the  
30 body snugly receives a cylindrical insert having a mating screw thread surface.

15. A nasal dispensing nozzle according to any of claims 1 to 14, wherein the screw thread path decreases in cross-sectional area from the entrance to the exit thereto.

5 16. A nasal dispensing nozzle according to claim 15, wherein the depth of the screw thread path progressively reduces from the entrance to the exit.

17. A nasal dispensing nozzle according to either of claims 15 or 16, wherein the width of the screw thread path progressively reduces from the entrance to the exit.

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18. A nasal dispensing nozzle according to any of claims 15 to 17, wherein the pitch of the screw thread path progressively reduces from the entrance to the exit.

15 19. A nasal dispensing nozzle according to any of claims 15 to 18, wherein the screw thread path has a tapered profile.

20. A nasal dispensing nozzle according to any of claims 1 to 19, wherein the outlet port is provided with a reversible stopper.

20 21. A housing assembly for reversible receipt of a fluid medicament discharge pump device for spraying a fluid medicament into a nasal cavity, the housing assembly comprising a body defining a cavity; and engageable with said body, a dispensing nozzle according to any of claims 1 to 20.

25 22. A fluid medicament dispensing device comprising a housing assembly according to claim 21 and received thereby, a fluid medicament discharge pump device.

30 23. A fluid medicament dispensing device according to claim 22, wherein the fluid medicament discharge pump device comprises a hollow casing defining a reservoir for containing a volume of fluid medicament and a pump having a suction inlet

extending within the hollow casing, the pump having a discharge outlet extending from a first end of the hollow casing for co-operation with the dispensing nozzle to enable pumped delivery of fluid from the reservoir to the dispensing nozzle.

5 24. A fluid medicament dispensing device according to either of claims 22 or 23, wherein said reservoir contains a volume of fluid medicament formulation.

25. A fluid medicament dispensing device as claimed in claim 24, wherein said fluid medicament formulation is in the form of a solution formulation.

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26. A fluid medicament dispensing device as claimed in claim 25, wherein said fluid medicament formulation is in the form of a suspension formulation.

15 27. A fluid medicament dispensing device as claimed in any of claims 24 to 26, wherein the fluid medicament formulation comprises an anti-inflammatory medicament compound.

28. A fluid medicament dispensing device as claimed in claim 27, wherein said medicament compound is a glucocorticoid compound.

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29. A fluid medicament dispensing device as claimed in claim 28, wherein said glucocorticoid compound is selected from the group consisting of 6 $\alpha$ , 9 $\alpha$ -Difluoro-17 $\alpha$ -(1-oxopropoxy)-11 $\beta$ -hydroxy-16 $\alpha$ -methyl-3-oxo-androsta-1,4-diene-17 $\beta$ -carbothioic acid S-fluoromethyl ester; 6 $\alpha$ , 9 $\alpha$ -difluoro-17 $\alpha$ -[(2-furanylcarbonyl)oxy]-11 $\beta$ -hydroxy-16 $\alpha$ -methyl-3-oxo-androsta-1,4-diene-17 $\beta$ -carbothioic acid S-fluoromethyl ester; and 6 $\alpha$ , 9 $\alpha$ -Difluoro-11 $\beta$ -hydroxy-16 $\alpha$ -methyl-17 $\alpha$ -[(4-methyl-1,3-thiazole-5-carbonyl)oxy]-3-oxo-androsta-1,4-diene-17 $\beta$ -carbothioic acid S-fluoromethyl ester.

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30. A fluid medicament dispensing device as claimed in claim 27, wherein said medicament compound is selected from the group consisting of PDE4 inhibitors, leukotriene antagonists, iNOS inhibitors, tryptase and elastase inhibitors, beta-2 integrin antagonists and adenosine 2a agonists.

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31. A kit of parts comprising a housing assembly according to claim 20 and a fluid medicament discharge pump device receivable thereby.

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